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# Forest Health Technology ENTERPRISE TEAM UPDATE

USDA FOREST SERVICE, STATE AND PRIVATE FORESTRY, FOREST HEALTH PROTECTION, FOREST HEALTH TECHNOLOGY ENTERPRISE TEAM

SUMMER 1999

## DFTM Early Warning System alerts PNW

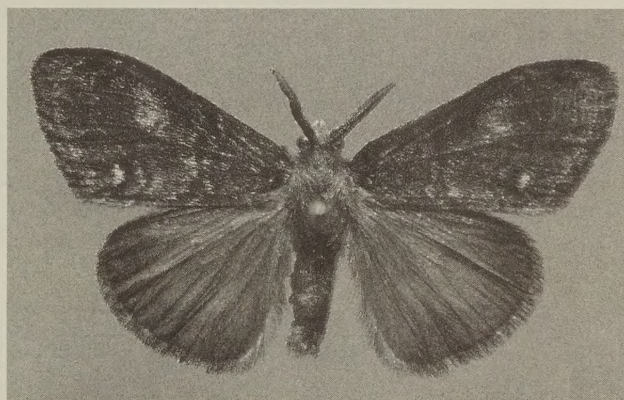
Results from the DFTM Early Warning System indicate increasing Douglas-fir tussock moth populations in the Pacific Northwest (Region 6 of the Forest Service). Monitoring this buildup and controlling the damage of a potential DFTM outbreak will be a major concern in Washington and Oregon in the immediate future.

For twenty years, the DFTM Early Warning System ( a pheromone-baited capture system) has monitored the rise and fall of tussock moth populations over 7-10 year cycles. The last population increase in Region 6 occurred in the early 1990s. Results from 1995 through 1998 show the increase of recent populations from relatively low levels in 1995 to a significant level during the last two years. Trap catches in Oregon and Washington have already exceeded the numbers

reported during both the early 1980s and early 1990s.

If populations continue to increase, there is potential for considerable defoliation of Douglas-fir and true fir trees. DFTM-related defoliation has already occurred in parts of California, notably around the Sequoia/King's Canyon National parks. This pattern fits the last outbreak of DFTM, in which defoliation in California preceded the population rise in the Pacific Northwest in the early 1990s. DFTM populations in adjacent

states, such as Idaho, also appear to be on the rise, increasing the likelihood that these states, too, may experience some DFTM defoliation.



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Adult male Douglas-fir tussock moth

Predictions for Region 6 are that some defoliation will be evident this year, with most significant defoliation occurring during 2000 to 2002.

See **DFTM alert**, page 2

### Inside . . .

Pheromone registered	2
Review Committee meets to assess Enterprise Team progress	3
Steering Committee meets to plan future direction	4
Enterprise Team continues DFTM monitoring support	4
STDP Program Manager position filled; Harold Thistle comes to Morgantown	5
Publications available	7
Events of Interest	Back page

## Chinese scientists visit

From July 19 to 29, FHTET-Fort Collins welcomed visitors from the Peoples Republic of China, in town for training. Ma Xiaoming and his wife, Xu Yan, came to Fort Collins to integrate the Airborne Video Toolkit into their airborne videography system. Mr. Ma is an Assistant Professor and Ms. Xu, an Engineer, both at the Working Center for Environmental Sciences in Beijing. Andy Mason (Director), Jim Ellenwood (Remote

Sensing Program Manager), and Loren Iverson (Information Systems Program Manager) were the FHTET contacts during their visit.

The Airborne Video Toolkit (AVT) consists of software that allows images taken with an airborne video camera and loaded into a computer to be mosaicked automatically, saving considerable time in creating a continuous image along a flight path. The AVT was developed by

See **Chinese visitors**, page 3

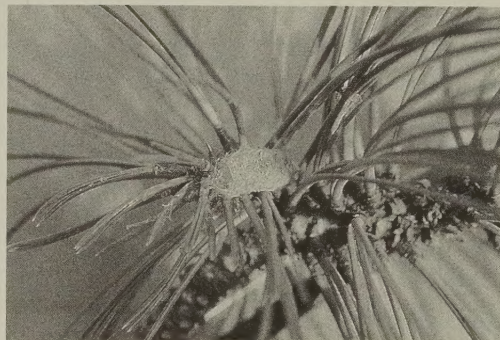


**DFTM alert**, from page 1  
The DFTM Early Warning System provides the first indications of a population increase, but is not the sole measure of population levels. Once trap catches reach a certain level, additional sampling of other life stages is initiated. DFTM trap catches can be expected to fall off as populations increase because the low dosage of pheromone used to bait these traps can be overwhelmed by the elevated natural pheromone levels. This drop in trap catches can give the impression that the population has dropped when, in fact, it is increasing. Further sampling of the larval and cocoon/egg mass stages is needed to more accurately predict future conditions.

Once the DFTM Early Warning System indicates a population buildup, other types of sampling are initiated to further identify local conditions. Lower crown larval sampling is conducted the spring of the following year, to determine present populations; and cocoon and egg mass sampling, also done on the lower crown branches of individual trees, is conducted the following fall to

predict the populations for the next year. In each type of sampling, insects are collected from the lower crown and translated to populations in the middle and upper crown to estimate the total tussock moth population and its future potential. Use of such labor intensive surveys are justified only when the DFTM Early Warning System shows that DFTM populations have reached a serious threshold. Such ground-based sampling was initiated in Region 6 this spring.

As a result of the DFTM Early Warning System information, Region 6 is preparing an Environmental Impact Statement (EIS) for potential treatment to protect areas where defoliation, or the presence of the insects, could cause significant impact to the forest or human environments. The draft EIS is



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Douglas-fir tussock moth cocoon.


scheduled to be completed this winter, and the final EIS will be issued in early spring, addressing potential treatment to occur over the next several years.

In the meantime, this year's DFTM Early Warning System traps are already out.

Further information on the DFTM population monitoring can be found in the following publications:

Daterman, G.E., R.L. Livingston, J.M. Wenz, and L.L. Sower. n.d. Douglas-fir Tussock Moth Handbook: How to Use Pheromone Traps to Determine Outbreak Potential. USDA Agricultural Handbook No. 546.

Martha H. Brooks, R.W. Stark, and Robert W. Campbell, eds. 1978. The Douglas-Fir Tussock Moth: A Synthesis. USDA Forest Service Science and Education Agency, Technical Bulletin 1585. U.S. Department of Agriculture, Washington D.C.

Iral Ragenovich. 1999. 1998 Douglas-fir Tussock Moth Early Warning System Trapping Summary for Oregon and Washington. Internal Report, USDA Forest Service, Pacific Northwest Region, Forest Insects and Diseases/Natural Resources. Portland Oregon. 

## Pheromone registered

John (Jack) Stein, Program Manager, Forest Health Technology Enterprise Team-Morgantown, announced the registration of MCH (3-methyl-2cyclohexen-1-one) in July. Jack's two years of work ended an extended Forest Service research and development effort

See **Pheromone** on page 7



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**Chinese visitors** from page 1  
Dave Linden of Intecs, International; he and Dave Graham of Intecs conducted the training in its use.

Complications in applying the AVT to Mr. Ma's system required customization of everything from the AVT software to the airborne camera mount in order to complete the training. The AVT was originally written for an analog camera system; Mr. Ma and Ms. Xu arrived with a recently-purchased digital video camera, requiring that the camera be recalibrated to the software in order to process the images. In addition, the Chinese use the PAL (for "phase alternating lines") standard for video signals, different from the NTSC (National Television Systems Committee) standard used in the United States, for which the AVT was written. Dave Graham also had to load a new operating system on Mr. Ma's laptop computer to deal with image processing. Once all of these alterations were made, Mr. Ma and Ms. Xu could continue training in the AVT's use.

The first step in conducting this training was to identify areas for gathering video footage. To do so, Bill Ciesla—entomologist, remote sensing expert, and former Director of MAG (precursor to FHTET)—selected areas of mountain pine beetle and spruce budworm damage west of Fort Collins for

Once the flight was ready, Barry Russell and Bill Snyder, Forest Service pilot, flew with the visitors to capture images of the damage. (The taped data were augmented with a tape of previously-flown areas in the Southern Region for practice in processing.)

Once video images were captured, the images, three-dimensional GPS data, and gyro-scope-generated tip-and-roll data associated with the images on the airplane were down-loaded into a computer containing the automosaicking software. The AVT software was

then run against the images to produce a continuous flight image.

While Mr. Ma had no prior experience with image gathering from an airplane, he found it easy to assist in the computer-related operations.

See **Chinese visitors** on page 6



Ms. Xu, Bill Ciesla and Mr. Ma inspect mountain pine beetle damage near Red Feather Lakes, Colorado.

ground inspection of damage and damage signatures. While the visitors were inspecting tree damage on site, Barry Russell, Remote Sensing Specialist, made modifications to the FHTET aircraft's camera mount to accommodate the new camera.

## FHTET hosts Review Committee meeting

At the beginning of June, a Review Team met to review FHTET's progress over the first four years of its existence. The need for a review after about 3-4 years had been identified when the Enterprise Team was established in 1995. Primary questions to be addressed by the review were:

1. Is the Enterprise Team achieving its mission?

2. What component(s) of the concept need improvement or redirection to ensure long-term success?
3. What additional work may be needed to fully implement the original enterprise concept?

The FHTET Review Team was convened by Mel Weiss, Acting Director of Forest Health Protection (FHP), and consisted of: Rob Mangold, Acting Deputy Director

of FHP (Team Leader); Sheila Andrus, National Program Leader for Entomology, Vegetation Management, and Protection Research in the Forest Service's Research and Development group; Mike Oraz, Director of USDA's APHIS National Biological Control Institute; Tom Ostermann, Wyoming State Forester; Ken Snell, Group Leader for

See **FHTET review** on page 6



## FHTET Steering Committee meets at WO

FHTET's Steering Committee met in Washington D.C. from June 30 to July 1 to assess the past year's progress and suggest areas for new or continued effort. The Committee was organized in 1996 and functions to provide strategic guidance to the Enterprise Team, to provide "course corrections" (e.g., opportunities that we should be aware of and take advantage of), and to provide a broad base of direction for programs of the Enterprise Team. We are particularly interested in input from the Steering Committee on individuals and organizations that we should be working with. This is the fourth year that the Steering Committee has met.

Committee members are: Janet Anderson, EPA, Washington, D.C.; Jerry Boughton, USDA Forest

Service (FS) Forest Health Protection (FHP), Anchorage, AK; Scott Cameron, International Paper, Rincon, GA; Elizabeth Chornesky, The Nature Conservancy, Ballston, VA; Ernest Delfosse, USDA Agricultural Research Service, Beltsville, MD; Bill Dickerson, North Carolina Department of Agriculture and Consumer Services (NCDA) and National Plant Board, Raleigh, NC; Greg Fitch, New Mexico Forestry, Santa Fe, NM, and Western representative for the National Association of State Foresters; Gerry Hertel, FS FHP, Radnor, PA; Mike Oraz, USDA APHIS, Washington, D.C.; Chris Risbrudt, FS Ecosystem Management, Washington, D.C.; Pete Rousoppoulos, Southern Research Station, Asheville, NC; Tom Thompson, FS Region 2, Lakewood, CO; Jack Walstad,

Oregon State University, Corvallis, OR; and Mel Weiss, FS FHP, Washington, D.C.

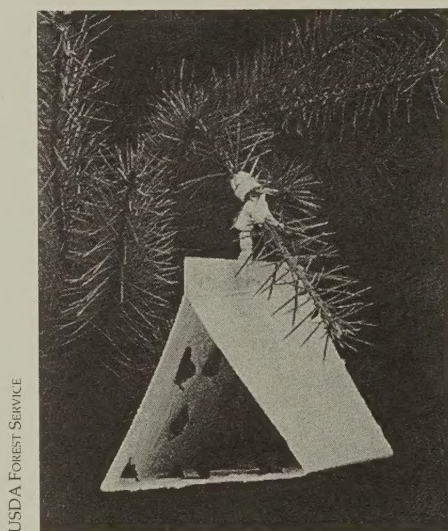
The meeting began with a review of goals set during last year's meeting. Andy Mason, Director of FHTET-Fort Collins, gave an overview of the follow-up activities on Action Items and Recommendations from the 1998 meeting. One of these recommendations was to reformat FHTET's budget breakdown by core funding (including base program costs and FHP base project costs) and entrepreneurial funding. The further breakdown of the budget provided the committee members a means of assessing the range of FHTET projects and cooperators. After Andy's presentation, Allan Bullard, Director of FHTET-Morgantown, gave an

See **Steering** on page 5

## FHTET continues role in DFTM system

Since 1980, FHTET has been supplying Douglas-fir tussock moth (DFTM) traps and pheromone attractant to field units as part of the DFTM Early Warning System. This service has put FHTET in touch with various businesses, and allowed FHTET to play a positive role in the local community.

At the beginning of the program, neither traps nor pheromone were commercially available, so part of the work involved contacting manufacturers for trap components; the rest involved soliciting orders from field units, and coordinating trap manufacture and shipping in time for hanging out the traps. Ellie Franz and Eunice Hopman, with the Methods Application Group (MAG), and then Sally Scrivner, with MAG and then its later incarnation, FHTET, were respon-



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*Douglas-fir tussock moth trap.*

sible for maintaining these contacts and ordering the traps.

Attractant and traps are supplied by separate entities. Initially, the attractant was supplied by the

Forestry Sciences Laboratory in Corvallis, Oregon, where it was developed. Since 1993, the attractant has been supplied by Phero Tech Inc., a Canadian company that manufactures insect management products, in coordination with the Forestry Sciences Lab. The body of the trap is a modified waxed-paper carton, produced by a mill in Michigan. While MAG was located in Davis, California, the traps were assembled at the Sacramento Rehabilitation Center, a training center for handicapped adults. When MAG moved to Fort Collins, Colorado, manufacture was given over to the Foothills Gateway Rehabilitation Center, a local business.

The relationship between MAG/FHTET and the rehabilitation

See **DFTM traps** on page 8



**Steering**, from page 4 overview of FY 1999 activities, major changes, and accomplishments. Allan also presented a brief description of the FY 2000 budget and Program of Work.

The greater part of the meeting was taken up with discussing a "Forks in the Road" document that had been prepared by Allan and Andy. Because FHTET is finishing up several long-term and larger projects, a reassessment of FHTET's direction in selecting projects for the coming year(s) was appropriate. The major topic of discussion was the question "What forest health issues need more attention in your organization?" The discussion led to an examination of the FHTET Strategic Plan, with the following comments:

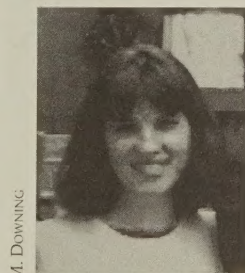
- Reaffirmed our primary customers: FHP staffs / Washington Office, States, other agencies and entities.
- Reaffirmed our focus on mid-term and long-term technology development.
- Reaffirmed our emphasis on core competencies and suggested that we consider adding restoration technologies and biotechnology as developmental areas.
- Be more selective about enterprise projects: go after enterprise customers in a planned, focused manner in a limited number of competency / skill areas (the 60/40 split of core / enterprise funds should no longer be a goal or restraint). Use this strategy to enhance FHTET's standing in key areas of competence, such as GIS and map-making.
- Develop qualitative and quantitative measures for evaluating the success of our goods and services.
- Examine opportunities to patent newly developed technologies.

See **Steering** on page 8

## Enterprise Team fills fulltime and intern positions

The FHTET position for the Technology Transfer Program Manager in the Fort Collins office has been filled! Marla Downing, currently an ecologist with the EPA's Region 7 Office in Kansas City, will be joining the Enterprise Team beginning on September 1.

Marla has considerable experience that will help her fit into the Enterprise Team. According to Andy Mason, Enterprise Team Director in Fort Collins, her familiarity with natural resource technology and experience with planning teams will be major assets in her work. Marla is familiar with GIS and satellite imagery, has planning experience with a watershed risk assessment, and has conducted a public survey for consideration in setting budgeting priorities. Previous marketing experience will also help her in communicating FHTET's efforts, and having worked with both the EPA and with the U.S. Fish and Wildlife Service, she brings some new perspectives to the job.



Marla Downing will join FHTET in September.

Working within the Enterprise Team, Marla will continue a long-standing love for natural systems and curiosity about how they work, both in the long-term and in the short-term. This interest is joined with an involvement with techno-

logical tools for assessing and monitoring current changes in the environment. As Marla explains: "Information technology tools can provide information about natural systems and their ability to function in a timeframe that allows humans to be more effective in their management of natural resources. My goal has been and will continue to be to provide tools to the folks on the front lines making daily decisions, and who are in the position to manage change so that our natural resources are protected." Having visited the area often (she and her husband spent their honeymoon in Steamboat Springs), Marla knows the move will be a natural fit for her family and her continued career in ecosystem health.

FHTET-Fort Collins has helped this summer through our connection to Colorado State University. Todd LaBandt, a Master's Degree candidate in Agriculture and Resource Economics, started working with us in May to help us gather information on urban forestry. He will be with us as long as we can hold onto him. Donnel Harris, an undergraduate student in Forestry at C.S.U. is working through the summer in various capacities: preparing simulation model documentation for publishing through the World-Wide Web and filling in wherever FHTET is in need. She has also been working "on the ground" with the Arapaho National Forest, performing stand examinations and trail maintenance.

See **Personnel** on page 7



**Chinese visitors**, from page 3  
Mr. Ma and Dave Graham discussed the processing of data and the correlation of image and navigation data, analyzed the output of the AVT, and identified the operational parameters of the software as it affected its use and the quality of the output. They also discussed potential complications in use of the AVT in China: for instance, the AVT will have to be altered to account for the use of differential GPS in China to improve the locational accuracy of the GPS data. Mr. Ma and Dave also discussed potential future enhancements to automosaicking systems, such as development of a robust

ized software.

During the visit, FHTET staff also demonstrated other FHTET projects and products to Mr. Ma and Ms. Xu. FHTET staff showed them the national insect and disease risk maps, demonstrated the use of the SmartForest data-visualization software under development, and demonstrated INFORMS, the project-management interface to Oracle data and ArcView graphical data displays.

The interaction between FHTET and other resource agencies, national and international, has always been considered important. Benefits are both technological and cultural.

an appreciation for the diversity in the world outside the United States and at home, and exposes us to other points of view regarding technology and the alternative uses of specific technologies to solve problems.

From Mr. Ma's point of view, the visit to FHTET was a valuable opportunity to see new and emerging technologies related to natural resource monitoring and management. He expressed an interest in further development of the AVT, as well as in the other technologies being pursued at FHTET. The interest is mutual: visits such as Mr. Ma's help the FHTET staff gain insights into our own systems and methods, and help extend the range of FHTET's involvement in forest health, worldwide. 🍁

### **FHTET Review**, from page 3

Region 6 Air Management, Forest Insects and Disease; Allan Bullard, Director for FHTET-Morgantown; and Andy Mason, Director of FHTET-Fort Collins. The Review Team met on June 2 and 3, 1999, at the USDA Forest Service's Washington Office-Detached facilities, in Fort Collins, Colorado.

The review centered on an evaluation of the progress of FHTET in concept and performance, with the goal of ensuring the long-term success of the Enterprise Team. The team found that FHTET displayed effective, responsive leadership, an outstanding professional staff, and strong partnerships in efforts undertaken to date. FHTET products have been of high quality, and useful to Forest Health Protection missions. Work undertaken has been approached with innovation and responsiveness to emerging

See **FHTET review**, page 9

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*Preparing to board: Barry Russell, Mr. Ma, Bill Snyder, Jim Ellenwood, and Ms. Xu ready to fly over insect damage areas in FHTET's remote sensing aircraft.*

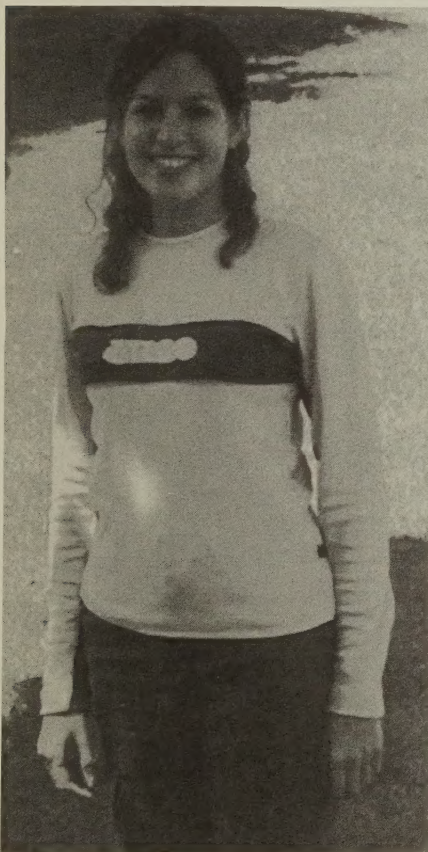
auto-correlation function for automatically identifying identical geographical points on adjacent image frames to help mosaic a continuous image.

The interaction between the trainers and the students proved beneficial to both. Mr. Ma and Ms. Xu learned how to use the AVT, while Dave Graham was exposed to the Chinese version of Windows and its capabilities, and Mr. Ma helped in debugging the custom-

According to Andy Mason, FHTET Director in Fort Collins, Mr. Ma and Ms. Xu's visit helped give direction to further development of the AVT, gives FHTET valuable exposure to the PAL video standard used in many other countries, and helps increase the effectiveness of training given by the Enterprise Team. In addition, as expressed by Andy Mason and Allan Bullard, FHTET Director in Morgantown, exposure to other cultures helps us develop




**Personnel**, from page 5  
Meanwhile, Wyned Morales, a student in microbiology at the University of Puerto Rico and an intern with the HACU National Internship Programs, which is administered by the Hispanic Association of Colleges and Universities in Washington, D.C. has been helping FHTET-Morgantown this summer. She has been working with Yun Wu both in the laboratory and in the field on the biological control of mile-a-minute weed project.




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Wyned Morales, a HACU student, is helping out in Morgantown this summer.

As reported in the Winter, 1999 Update, Harold Thistle, with the Missoula Technology and Development Center in Missoula, MT, joined the Enterprise Team in Morgantown as the Program Manager for the Equipment and Applications Technologies Program. Harold had stayed in place in Missoula to help effect an orderly transfer of his tasks but has now completed his move to Morgantown. He can be contacted at (304) 285-1574, at hthistle/na\_mo (for Forest Service IBM users) or via e-mail at hthistle/na\_mo@fs.fed.us. His fax is (304) 285-1564. His move to Morgantown puts him closer to the Enterprise Team's other program managers there in order to interact more closely with them on FHTET-Morgantown's other programs and also puts him closer to our clients, cooperators, and partners. 

### Pheromone, from page 2

and resulted in the unconditional registration of this anti-aggregation pheromone for the Douglas-fir beetle (*Dendroctonus pseudotsugae*) and the spruce beetle (*D. rufipennis*). This is the first bark beetle pheromone ever registered by the Environmental Protection Agency for forestry use. The MCH Bubble Cap (Phero Tech Inc.) is now available to protect western forests from current bark beetle outbreaks in Idaho and Washington. 

## Publications available

The following are publications now available for distribution through FHTET-Morgantown.


Isaacson, Dennis, and Martha Brooks. 1999. Weed Biocontrol: Extended Abstracts from the 1997 Interagency Noxious-Weed Symposium. FHTET 98-12, July 1999

Jette, Cynthia, John Connett, and Joseph McCaffry. 1998. Biology and Biological Control of Agents of Yellow Starthistle. FHTET 98-17, August 1999.

Hall, Stephen, James Sullivan, and Dale Schweitzer. 1999. Assessment of Risk to Non-Target Macro-Moths after B.t. Application to Asian Gypsy Moth in Cape Fear Region of North Carolina. FHTET 98-16, July 1999.

Rykken, Jessica and Trish Hanson. 1999. A Guide to Common Bark Beetles (Coleoptera: Scolytidae) Endemic to the Northeastern United States. FHTET 98-15, June 1999.

Gibson, Philip and Charles Parker. 1999. Proceedings of the Southern Appalachian Biological Control Initiative Workshop. FHTET 98-14, June 1999.

To order any of these publications, use FHTET's e-mail address, fhtetmail/wo\_ftcol@fs.fed.us (Forest Service system: fhtetmail/wo\_ftcol) or write to: FHTET-Morgantown, USDA Forest Service, 180 Canfield St., Morgantown, WV 26505. 






## Steering, from page 5

- Make all FHTET publications available on the World-Wide Web.
- Continue using the Steering Committee to assess and direct group progress. In addition, formally charter the Steering Committee.

Once final recommendations were made, Allan Bullard recognized the contributions of Jerry Boughton and Gerry Hertel as FHP Director representatives on the Steering Committee for the past two years. Jerry and Gerry have now stepped aside, and Ken Snell, FHP Director in the Pacific Northwest Region, and Bob Anderson, FHP Director in the Southern Region, have replaced them on the committee. Allan also noted that Wray Freeman, representative for the South Carolina Forestry Commission, has retired and a replacement for Wray will be named soon.

The Steering Committee meeting for FY 2000 will be in Fort Collins in April or May of 2000. Greg Fitch will be the Chairperson of the Steering Committee for that meeting, with Mike Oraz as Co-chairperson. In the meantime, Steering Committee members will help gain FHTET exposure within the natural resource community by identifying one meeting during the coming year in which FHTET could make a presentation, display a poster describing FHTET products and/or services, or have a Steering Committee member present FHTET accomplishments, products, or services.

The Steering Committee's input is welcomed and appreciated by the Enterprise Team. The Committee's guidance will help ensure that the Enterprise Team's plans and goals are sound and that its programs remain relevant to FHTET's mission. 

## DFTM traps, from page 4


centers has been a positive one for both entities. Since 1982, Foothills Gateway, a Larimer County facility for training the physically and mentally handicapped, has been under contract with FHTET to manufacture and assemble about 7,000 traps per year. The project benefits both Foothills Gateway and the Forest Service, as Foothills Gateway is able to employ and train several handicapped persons and the Forest Service has a source of reliably-made traps at a very reasonable rate (25 cents per trap in 1999). Manufacturing these traps gives the workers at Foothills Gateway a sense of accomplishment and pride, and FHTET supports the local community.

Jack Jones of the Foothills Gateway Rehabilitation Center emphasized that the staff enjoyed the work—even the messy job of putting adhesive on the traps. They appreciate working with their hands, and feel that they are doing something worthwhile, he commented.

Supplying DFTM traps to the field is a task that stretches throughout half of each year. During the first year of January of each year, the trap coordinator sends a letter to the FHP Directors of Regions 1-6, asking that their FHP staffs contact the cooperating States in the Region

and submit a consolidated order for pheromone traps to FHTET. The orders are received by the first week of February, some for as few as 40 traps, some for as many as 1,700 traps. The coordinator tallies the orders and figures out what quantities of materials is needed to fill the orders.

Required materials for the traps include: flat waxed cardboard cartons, Tangle Trap (a sticky adhesive that traps the moths attracted by the pheromone), twist ties (used for hanging the traps), and pheromone. It takes Foothills Gateway approximately two and a half months to assemble the traps. By June 1, the traps are finished, counted out, packed, and shipped. Traps thus arrive at Kettle Falls and Coeur d'Alene and Toppenish and Sandy (among other destinations) in time to put out the traps in the late summer and early fall. In fact, trap manufacture through FHTET has been so efficient that some Forest Service clients have ordered traps to support spruce budworm population monitoring, as well.

The overall result of this cooperative effort is public service on a national, Regional, and local scale. While the objective is the monitoring of insect populations across the West, the satisfaction in the work is felt very close to home. 





**FHTET review**, from page 6 problems through a mix of on-site contractors, cooperative grants, and partnering, while making good use of human resource reinvention issues related to staff empowerment and organization.

The Team identified several areas requiring increased efforts including communication with other units and planning and program management. They also proposed solutions to encourage more effective communication and use of FHTET skills.


The Review Team found that there is an uneven understanding among FHTET customers as to FHTET base program versus entrepreneurial funding. Base funding covers the operating expenses of the Enterprise Team, and is tied to FHP projects outlined in the FHTET Strategic Plan and annual plan of work; entrepreneurial funding comes from FHP special projects, projects for other Forest Service technology centers and field units, and other agencies, as direct funding or in-kind support (labor or materials). The Review Team felt that, when FHTET customers do not understand how funding is allocated and work priorities are set, some may question how and why technology development funds are spent, and whether "pet" projects are receiving unjustifiable precedence over their work.

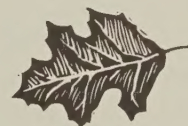
Another communications problem lies in the incomplete coverage FHTET has had in promoting its capabilities and its products throughout the Forest Service. While some FHP field Directors have made good use of FHTET capabilities, other potential cooperators and partners (e.g. some State Foresters, Forest Service units other than FHP, etc.) have never heard of the group. There are also FHP directors who have been frustrated in their attempts to set FHTET project priorities or implement cooperative projects.

Remedies proposed for addressing the above situations included displaying the annual budget in a matrix along with the Program of Work to clarify sources of FHTET funding and distributing "fact sheets" to improve awareness of Enterprise Team programs, projects, and processes and how they are addressed. Another suggestion was to use the Special Technology Development Program (STDP) Steering Committee members as liaisons between FHTET and FHP Regional Directors and FS Research and Development. The STDP representatives could then raise general awareness about FHTET and its operations, as well as be a focal point for field review and input on the Team's annual Program of Work. And a third proposal was to encourage the Enterprise Team staff to make more visits to FHP field units.

The Review Team also expressed the concern that long-term strategic goals could be delayed or compromised by short-term problem-solving. To prevent such conflicts from arising, the Review Team suggested that the STDP Steering Committee also provide input on the appropriate balance of core and entrepreneurial activities and opportunities for outreach to seek new partners.

The Review Team also recommended in-house steps, suggesting that the Enterprise Team write problem/issue statements for each existing program area (e.g., Biopesticides); that FHTET examine other Forest Service enterprise teams for alternative ways to manage projects and funds; and for FHTET to actively participate in the Forest Service-wide Technology and Development Symposium proposed for fiscal year 2000.

We expect that future administrative reviews will be conducted to ensure that the Enterprise Team is progressing toward fulfilling its capability. 



\* \* \*

In an effort to make more efficient use of the media available to the Enterprise Team, we would like to gauge your interest in receiving the FHTET Update in electronic format. If you would be interested in receiving a .pdf version of the newsletter via e-mail rather than the paper version through the regular mail, please let us know at [fhtetmail/wo\\_ftcol@fs.fed.us](mailto:fhtetmail/wo_ftcol@fs.fed.us) (Forest Service system: fhtetmail/wo\_ftcol). We would enclose a reader program so that you could access this version of the newsletter regardless of your operating system and existing applications. An advantage: you would receive the FHTET Update **in COLOR!** If there is sufficient interest, we would like to make this newsletter available in either medium, thereby lessening the impact we have on our natural resources.





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## Events of Interest

### September 13-17, Breckenridge, CO.

1999 Joint Meeting of the Western International Forest Disease Work Conference and the Western Forest Insect Work Conference

**Contact:** Jane Taylor (WIFDWC) 406-329-3463 or Terry Rogers (WFIWC) 505-842-3287. <http://fsweb.ftcol.fs.fed.us/wo-fc/fhtet/combine1999>

### September 15-17, 1999, Madison, WI

IUFRO Working Unit 4.11.03: Expert systems and information management. Ninth workshop on artificial intelligence and related topics.

**Contact:** Daniel L. Schmoldt, Ph.D. USDA Forest Service, Broods Forest Products Center, Virginia Tech., Blacksburg, VA, 24061-0503. Phone: 540-231-4674; Fax: 540-231-8868. Web site: [www.ersac.umn.edu/iufro/iufro.net/d4/hp41103.htm](http://www.ersac.umn.edu/iufro/iufro.net/d4/hp41103.htm)

**Registration information at:** [http://www.srs4702.forprod.vt.edu/meetings/AI\\_Workshop/sept99.html](http://www.srs4702.forprod.vt.edu/meetings/AI_Workshop/sept99.html)

